# DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

### LAKE TROPHIC DATA

# MORPHOMETRIC:

| Lake: WACHIPAUKA POND  |      | Lake Area (ha):                    | 9.02    |
|------------------------|------|------------------------------------|---------|
| Town: WARREN           |      | Maximum depth (m):                 | 9.1     |
| County: Grafton        |      | Mean depth (m):                    | 3.2     |
| River Basin: Merrimack |      | Volume (m³):                       | 286000  |
| Latitude: 43°59′ N     |      | Relative depth:                    | 2.7     |
| Longitude: 71°55′ W    |      | Shore configuration:               | 1.50    |
|                        | 194  | Areal water load (m/yr):           | 6.06    |
| Shore length (m): 16   | 500  | Flushing rate (yr <sup>-1</sup> ): | 1.90    |
| Watershed area (ha):   | 85.5 | P retention coeff.:                | 0.62    |
| % watershed ponded:    | 0.0  | Lake type: natura                  | l w∕dam |

| BIOLOGICAL:                        | 18 March 1987        | 2 September 1987     |  |
|------------------------------------|----------------------|----------------------|--|
| DOM. PHYTOPLANKTON (% TOTAL) #1    | SPARSE - NO DOMINANT | CHRYSOSPHAERELLA 35% |  |
| #2                                 |                      | DINOBRYON 20%        |  |
| #3                                 |                      | SYNURA 10%           |  |
| PHYTOPLANKTON ABUNDANCE (cells/mL) |                      | 2305.0               |  |
| CHLOROPHYLL-A (Ug/L)               |                      | 5.29                 |  |
| DOM. ZOOPLANKTON (% TOTAL) #1      | KELLICOTTIA 30%      | VORTICELLA 26%       |  |
| #2                                 | KERATELLA 28%        | POLYARTHRA 21%       |  |
| #3                                 | SYNCHAETA 18%        |                      |  |
| ROTIFERS/LITER                     | 170                  | 46                   |  |
| MICROCRUSTACEA/LITER               | 15                   | 41                   |  |
| ZOOPLANKTON ABUNDANCE (#/L)        | 188                  | 117                  |  |
| VASCULAR PLANT ABUNDANCE           |                      | Sparse               |  |
| SECCHI DISK TRANSPARENCY (m)       |                      | 2.7                  |  |
| BOTTOM DISSOLVED OXYGEN (mg/L)     | 0.9                  | 0.4                  |  |
| BACTERIA (fecal col., #/100 ml) #1 |                      | < 10                 |  |
| #2                                 |                      |                      |  |
| #3                                 |                      |                      |  |

# SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 5.5 Hypolimnion volume (m³): 18500

| CHEMICAL:  Lake: WACHIPAUKA POND  Town: WARREN |               |        |                  |        |        |
|--|---------------|--------|------------------|--------|--------|
|  | 18 March 1987 |        | 2 September 1987 |        |        |
| DEPTH (m)                                      | 3.0           | 6.0    | 2.0              | 5.0    | 7.5    |
| pH (units)                                     | 6.0           | 5.9    | 6.5              | 6.1    | 6.2    |
| A.N.C. (Alkalinity)                            | 2.8           | 3.3    | 2.2              | 2.3    | 10.3   |
| NITRATE NITROGEN                               | 0.05          | 0.07   | < 0.05           | < 0.05 | < 0.05 |
| TOTAL KJELDAHL NITROGEN                        | 0.80          | 0.73   | 1.03             | 0.58   | 0.71   |
| TOTAL PHOSPHORUS                               | <0.001        | <0.001 | <0.001           | 0.013  | 0.021  |
| CONDUCTIVITY (D mhos/cm)                       | 26.7          | 27.4   | 23.5             | 23.8   | 34.2   |
| APPARENT COLOR (cpu)                           | 22            | 23     | 22               | 23     | 35     |
| MAGNESIUM                                      |               |        | 0.38             |        |        |
| CALCIUM  |               |        | 2.1              |        |        |
| SODIUM   |               |        | 1.0              |        |        |
| POTASSIUM                                      |               |        | 0.30             |        |        |
| CHLORIDE                                       | < 2           | < 2    | < 2              | < 2    | < 2    |
| SULFATE  | 6             | 6      | 5                | < 1    | 4      |
| TN : TP  |               |        |                  | 45     | 34     |
| CALCITE SATURATION INDEX                       | -             |        | 4.1              |        |        |

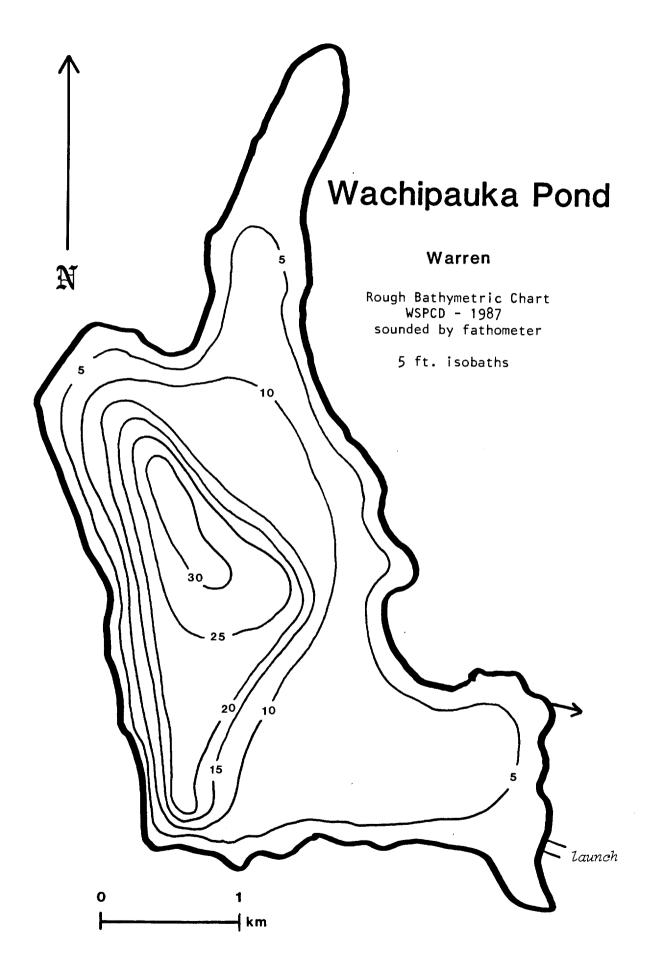
All results in mg/L unless indicated otherwise

## TROPHIC CLASSIFICATION: 1987

| D.O. | S.D. | PLANT | CHL | TOTAL | CLASS |
|------|------|-------|-----|-------|-------|
| 5    | 2    | 0     | 1   | 8     | Meso. |

#### **COMMENTS:**

- 1. Formerly called Meader Pond.
- 2. This is a remote pond that is occasionally sampled by helicopter during the Fish & Game Department's Spring stocking flight. It can be accessed by a very rough jeep trail but hiking is recommended.
- 3. No launch area was present; no cottages were present.
- 4. Bluegreen algae was the dominant whole-water phytoplankton family (80%), with Merismopedia (80%) the dominant genus.



### FIELD DATA SHEET

LAKE: WACHIPAUKA POND

DATE: 09/02/87

TOWN: WARREN

WEATHER: CLOUDY & SUNNY W/LIGHT BREEZE

| DEPTH<br>(M) | TEMP<br>(°C) | *DISSOLVED<br>OXYGEN | OXYGEN<br>SATURATION |
|--------------|--------------|----------------------|----------------------|
| 0.1          | 17.9         | 9.2                  | 95 %                 |
| 1.0          | 17.8         | 9.2                  | 95 %                 |
| 2.0          | 16.9         | 9.1                  | 92 %                 |
| 3.0          | 16.3         | 9.0                  | 91 %                 |
| 4.0          | 15.8         | 8.6                  | 84 %                 |
| 5.0          | 14.5         | 6.5                  | 62 %                 |
| 6.0          | 10.3         | 0.4                  | 4 %                  |
| 7.0          | 8.5          | 0.4                  | 3 %                  |
| 8.0          | 8.0          | 0.4                  | 3 %                  |
| 8.5          | 7.9          | 0.5                  | 4 %                  |
|              |              |                      |                      |
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SECCHI DISK (m): 2.7

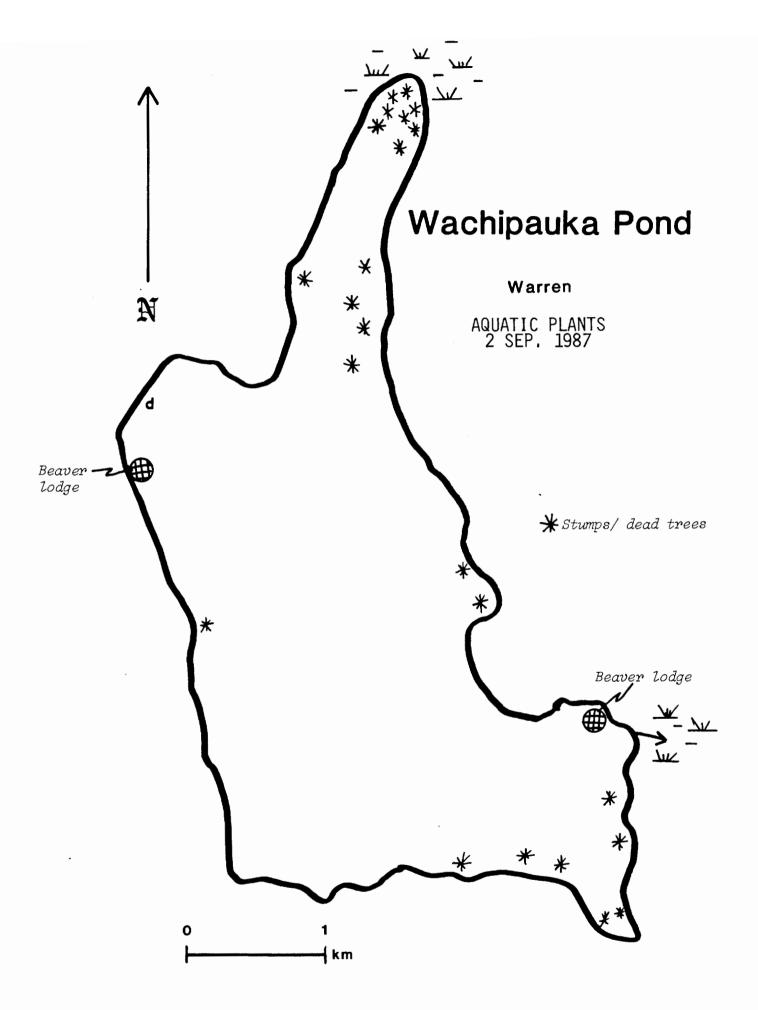
BOTTOM DEPTH (m): 8.7

Water appeared to be very cloudy to the

naked eye.

TIME: 1215

\*Dissolved oxygen values are in mg/L



| AQUATIC PLANT SURVEY |  |                 |           |  |  |
|----------------------|--|-----------------|-----------|--|--|
| LAK                  | LAKE: WACHIPAUKA POND TOWN: WARREN DATE: 09/02/8 |                 |           |  |  |
| <u>ار م بر</u>       | PLANT  | NAME            |           |  |  |
| Key                  | GENERIC  | COMMON          | ABUNDANCE |  |  |
| d                    | Dulichium arundinaceum                           | Three-way sedge | Sparse    |  |  |
| -                    |  |                 |           |  |  |
|                      |  |                 |           |  |  |
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|                      |  |                 |           |  |  |

# OVERALL ABUNDANCE: Sparse

### **GENERAL OBSERVATIONS:**

- 1. Plants were extremely sparse. A few stumps and dead trees were present but one three-way sedge plant was the only aquatic plant observed.
- 2. Two beaver lodges were observed. The dam was a combination of a beaver dam and an earth/rock dam.